❑ Permeable membrane for gas separation - comprises asymmetric polysulphone support layer coated with a polymeric separation layer.

L20 ANSWER 110 OF 121 WPINDEX COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 1989-033498 [05] WPINDEX
DNC C1989-014525
DC A26 A88 J01
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PA (UNIC) UNION CARBIDE CORP; (PRAX-N) PRAXAIR TECHNOLOGY INC
CYC 15
PI EP 301597 A 19890201 (198905)* EN 14p
R: BE DE ES FR GB IT SE
BR 8803771 A 19890221 (198913)
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EP 301597 B1 19931110 (199345) EN 22p
R: BE DE ES FR GB IT SE
DE 3885527 G 19931216 (199351)
ES 2045034 T3 19940116 (199407)
KR 9303213 B1 19930423 (199421)
ADT EP 301597 A EP 1988-112389 19880729; JP 01111421 A JP 1988-190734 19880801; US 4881954 A US 1987-80476 19870731; US 4990165 A US 1989-413094 19890927; JP 05029490 B JP 1988-190734 19880801; CA 1320026 C CA 1988-573512 19880729; EP 301597 B1 EP 1988-112389 19880729; DE 3885527 G DE 1988-3885527 19880729, EP 1988-112389 19880729; ES 2045034 T3 EP 1988-112389 19880729; KR 9303213 B1 KR 1988-9779 19880729
FDT JP 05029490 B Based on JP 01111421; DE 3885527 G Based on EP 301597; ES 2045034 T3 Based on EP 301597
PRAI US 1987-80476 19870731
AN 1989-033498 [05] WPINDEX
AB EP 301597 A UPAB: 19930923
A composite permeable membrane (I) for gas sepn. is claimed comprising: (a) a porous, polymeric asymmetric support layer having a dense semi-permeable skin (II) and a less dense, porous support region; and (b) a sepn. layer (III) deposited on (II), but not altering the structure of the support layer; (III) having a selectivity for the more readily permeable component of a gas mixt. equal to or greater than those of (II). (I) is pref. in the form of a hollow fibre.

A process for prepn. of (I) is also claimed in which the support layer is produced in a porous form, washed, dried and then exposed to a temp. approaching the Tg of the membrane material under non-swelling conditions for a time sufficient to form asymmetry in the membrane with increased compaction resistance and collapse pressure. Opt. (II) can be deposited on the support layer before or after treatment to form asymmetry. Also claimed is the use of (I) to separate gas mixts ., pref. air (into O2 and N2), or mixts. of H2 and N2, or mixts. of CO2 and CH4. An asymmetric membrane comprising the support layer (a) and having enhanced gas separation characteristics is also claimed.